

and is of shorter duration than that of a single instillation of equivalent amounts of sulphate of hyoseyamia.

7. The full action of a single instillation of either the one-fortieth or the one-twentieth of a grain of sulphate of daturia upon the iris and ciliary muscle, remains *intact* for a shorter time than that of a single instillation of equivalent amounts of sulphate of hyoseyamia; the time of the latter being almost double that of the former.

8. With the use of the amounts given of both the drugs, primary calculation of refractive error may be accurately obtained without second instillation, after the lapse of twenty-four hours.

9. The long-continued dilatation of the pupil and the slow return of ciliary power occasioned by the amounts given of both the drugs, render them absolutely useless where we desire accurate ophthalmoscopic examination in cases dependent upon their use.

10. The astringent and irritant action of the two drugs upon the conjunctiva may be avoided by the use of a neutral salt.

11. The comparatively rare and slight transient constitutional effect caused by a single instillation of the amounts given of sulphate of daturia may be considered as perfectly harmless, and of no consequence.¹

12. The grave constitutional disturbance sometimes seen during the use of a single instillation of the amounts given of sulphate of hyoseyamia, should render us cautious in its employment.

PHILADELPHIA, 1507 Locust Street.

ARTICLE IX.

A CASE OF OBSTRUCTION OF THE INFERIOR CANALICULUS OF THE EYE BY DACRYOLITHS. BY HENRY G. CORNWELL, M.D., of Columbus, Ohio, Clinical Lecturer on Ophthalmology and Otology, Starling Medical College, Columbus, Ohio.

J. P., æt. 46, Columbus, Ohio, came under the observation of the writer, March 20, 1882, complaining of an interference with the escape of the tears from the left eye, which had annoyed him for ten years. An examination revealed lachrymal conjunctivitis, the lachrymal punctum slightly everted, its orifice of normal size, and the walls of the canal somewhat thickened. No accumulation of tears in, or any evidence of inflammation of the lachrymal sac. Suspecting a stricture of the canaliculus, this passage was slit up by means of a delicate pair of scissors, one blade of the instrument passing readily through the canal without obstruction. On the following day on attempting to separate the edges of the incision, in order to prevent their union, by means of a Bowman probe held vertical, the instrument struck a gritty substance, which proved to be one of four

¹ During the progress of these experiments, the author has been forcibly struck with the similarity of the behaviour of atropia and daturia.

dacryoliths, which were arranged bead-like along the floor of the canal. The canal itself, after their removal, was found to be much enlarged as a result of this calcareous deposit.

The concretions were blackish-gray, and of irregular, grape-cluster-like form. They were placed in the hands of Mr. Curtis C. Howard, professor of chemistry in Starling Medical College, who subjected the smallest one to chemical analysis. The following is his report :—

“The dacryoliths were found to weigh as follows : .234, .163, .134, .090 grain. The last one contained : organic matter 28.3 per cent., inorganic matter 71.7 per cent. The inorganic matter was found to be chiefly, if not entirely, phosphate of lime ; the small quantity (.09 grain) preventing a complete examination for all acids and bases.”

Such concretions, formed by a deposit of the saline elements of the tears, are very rarely observed.¹ They have been found in the lachrymal gland, on the conjunctival surface of the upper lid,² in the ducts of the Meibomian glands, in the conjunctival *cul-de-sac*, in the lower canaliculus and lachrymal duct. The cause of their formation is not clearly understood. In some instances the deposit is due to a change in the physical properties of the fluid corresponding in character to that which brings about the formation of urinary, salivary, and biliary calculi. In other instances they appear to be due to the calcification of a fungus formation, occurring in connection with a chronic catarrhal inflammation of the lachrymal passages. They are not observed as a result of dacryocystitis, or complete obstructions of the lachrymal duct, due to strictures.—(*Mackenzie and others.*)

181 EAST STATE ST.

ARTICLE X.

AN ANALYTICAL EXAMINATION OF ONE HUNDRED CASES OF EXTIRPATION OF THE KIDNEY ; WITH A TABULAR RECORD ARRANGED CHRONOLOGICALLY. By ROBERT P. HARRIS, A.M., M.D., of Philadelphia.

THREE forms of operating upon the kidney are now designated by acknowledged and distinct titles, between which there should be no mistake either in the subjects of descriptive papers or the indices of journals. *Nephrotomy*, *nephrolithotomy*, and *nephrectomy* are sufficiently clear in

¹ Among 25,740 eye cases treated at the Brooklyn Eye and Ear Hospital during the last thirteen years, 2 cases having dacryoliths were observed (Thirteenth Annual Report of The Brooklyn Eye and Ear Hospital, Jan. 1882).

² Two years ago a case, the patient a girl, came under the writer's care, in which there were found four or five small chalky concretions on the palpebral conjunctiva of one eye, which could only be removed with a knife. They produced effervescence when dropped into dilute mineral acid.